

## **Invasive Carp Prevention, Detection, and Preparation Michigan's Actions and Activities to February 2016 Department of Natural Resources**

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### **PLANNING**

- Actively participate on the Asian Carp Regional Coordinating Committee – Focus on the Chicago Area Waterway System (CAWS). Participated as a partner agency and cooperated with partner agencies to evaluate control mechanisms and pathways for Asian carp into the Great Lakes
- Serve on the U.S. Army Corp of Engineers Great Lakes Mississippi River Interbasin Separation Study Brandon Road Executive Steering Committee
- Served as a resource member on the CAWS Advisory Committee seeking consensus for long-term solutions to keep invasive carp out of the Great Lakes

### **PREPARATION**

- Conducted a tabletop exercise to prepare for addressing an invasive carp report (2013)
- Conducted a field exercise in the St. Joe River to better prepare Fisheries Division for a possible Asian carp detection or invasion (2013). Effort was over 1 week, employing 15 boats, 32 staff, included experimental gear and cost \$93,000, providing insight as to what it would take to address Asian carp concerns in Michigan tributaries.
- Attended U.S. Geological Services control technology demonstration in Morris, Illinois (2014)
- Early detection response exercise in Lake Erie, partnering with Ohio (2014)
- Innovated and acquired a response trailer and specific equipment such as blocking nets to use in case of a possible Asian carp detection (2014)
- Working with Illinois in 2014 to have Michigan DNR staff work collaboratively in an Asian carp removal/assessment effort
- Continued partnership with Illinois in 2015 to assist with barrier defense removal efforts on the Illinois River, while also increasing staff training with removal methodologies for Asian carp

### **DETECTION**

- eDNA – cooperate and collaborate with partner agencies to collect environmental DNA samples from areas where invasion is expected based upon habitat and geographic criteria in Lakes Erie and Michigan
- Commercial Fishermen reimbursement program: provide reimbursement to a Lake Erie commercial fisherman to assist with sampling grass carp and monitor for bighead and silver carp
- Compensated commercial fishers for targeted effort in areas with preferred habitat (2015)
- Inspected bait shops and live food markets for the presence of bighead and silver carp. Also investigated public reports of live bighead or silver carp in food markets. No bighead or silver carps were detected during inspections and investigations (2015)
- Increased public and stakeholder awareness for reporting mechanisms with creation and promotion of new invasive species website ([www.michigan.gov/invasivespecies](http://www.michigan.gov/invasivespecies))

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## **OUTREACH AND EDUCATION**

- Produced the juvenile Asian carp identification video (<http://www.youtube.com/watch?v=tekIq3L0gPA&feature=youtu.be>)
- Produced bighead and silver carp displays for education/outreach events
- Multiple presentations, radio, and television interviews throughout the state regarding invasive carp

## **RESEARCH**


- Serve on a Management Transition Board for the NOAA/GLRI invasive species projects at Notre Dame to evaluate eDNA technologies and monitoring, and invasive species pathways (2013-2016)
- Initiated grass carp (as a surrogate for bighead and silver carp) research in western Lake Erie (2014)
- Partnered with Central Michigan University and Michigan State University to implement grass carp research to determine reproductive capacity, natal origin, and seasonal habitat use and movements to gain knowledge that will increase effectiveness of future control efforts for all invasive carp species (2015)
- Initiated invasive carp stakeholder workshop project to gauge public perception on control options, including use of chemicals, to prepare for implementation of invasive carp control actions if they are introduced in Michigan waters (2015)

## **CRITICAL TO PREVENTING INVASIVE CARP FROM ENTERING THE GREAT LAKES**

- Support ongoing activities for prevention, detection, management, & control through the Asian Carp Regional Coordinating Committee Framework
- Fund construction at Brandon Road to prevent transfer of invasive species to the Great Lakes
- Continue to seek long term actions to prevent transfer of invasive species between the Mississippi River and Great Lakes basins

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## Stopping the Invasion: Protecting the Great Lakes



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February 2017

[www.michigan.gov/invasivescarp](http://www.michigan.gov/invasivescarp)

## There is no evidence of bighead or silver carp in the Great Lakes!

### The Asian Carps



White Irides Hybrid *Hybrid*  
Silver carp *Hypocentrus nigricauda*  
Grass carp *Ctenopharyngodon idella*  
Black carp *Megalopterygion pinnatus*

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## Bighead and silver carp are master invaders!

- Millions of eggs – reproduce multiple times
- Rapid growth
- Competition & predation
- Temperature not limiting
- Adaptable



[www.michigan.gov/invasivescarp](http://www.michigan.gov/invasivescarp)

## Invasion would occur nearshore, rivers, and inland lakes in Michigan



**Silver threaten boating and recreation.**

- 10 – 25% reduction
- Millions lost
- Local economies biggest risk



[www.encligas.gov/innovacion](http://www.encligas.gov/innovacion)

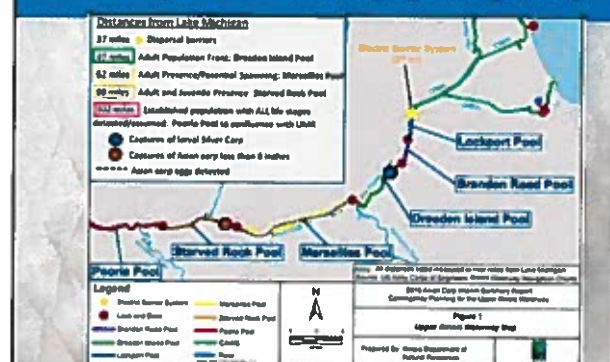
Invasive carp have spread throughout at least 19 states.



## Chicago Area Waterway System



## Chicago Area Waterway System (CAWS)







## Progress Towards Long Term Actions

### Chicago Area Waterways System Advisory Committee

- *Consensus letter to President Obama*
- *Further work on technical aspects*
- *Next steps to be determined*
- *Funding coalition has formed*

[www.michigan.gov/invasivescorp](http://www.michigan.gov/invasivescorp)

## What is Michigan Doing?

### Preventing – Planning - Preparing


#### Prevention:

- **Collaboration & Representation:** Asian Carp Regional Coordinating Committee, Monitoring & Response Workgroup, ACOE Great Lakes Mississippi River Interbasin Separation Executive Steering Committee Species (GLMRIS), Chicago Area Waterways Advisory Committee
- **Education and Outreach** – baitfish, materials, social media, fishing guide, website
- **Monitoring** – eDNA, federal, state, and commercial vessels


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## Monitoring

### Michigan & USFWS eDNA



**Elkhorn and Silver Carp eDNA Early Detection Protocol**  
 All 2016 eDNA Results  
 Number of Samples Collected: 7630  
 Number of eDNA Positive: Silver Carp 11 Elkhorn Carp 1



**eDNA Sample Results**  
 ● Sample  
 ● Positive Sample (July 2016)

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## What is Michigan Doing?

### Preventing – Planning - Preparing

#### Planning

- **Mutual Aid Agreement – States & Provinces**
- **Stakeholder engagement – MSU, Dr. M. Gore**
- **Revision of Michigan's Invasive Carps Management Plan**




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**What is Michigan Doing?**  
Preventing – Planning - Preparing

**Preparation**

- St. Joseph River exercise
- Lake Erie exercise
- Cross-training with Illinois DNR
- Equipment procurement and availability
- Incident command system training



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**What is Michigan Doing?**  
Novel Innovation

**Michigan's Invasive Carp Challenge**

- \$1 million dollars state funds
- Keep bighead and silver carp from entering the Great Lakes
- Innocentive – GLOBAL reach

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**Positive outlook for continued action.**

1. "Invasive carp are still below Brandon Road Lock and Dam"
2. "No evidence to suggest they are already here in Great Lakes"
3. "Can reduce risk and prevent invasive carp establishment by actions on all levels"
4. "Affordable for our future"

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**Grass Carp**

- Incidental in Great Lakes for 30 years
- Prohibited in Michigan since 1969
- Have not exhibited invasive properties of bighead and silver carp
- Sterile & fertile
- Collaboration with Lake Erie jurisdictions
- Science path to response action
- Still very few, hard to find

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